VULCAN

# INSTALLATION AND OPERATION MANUAL

# MAGIC-FIN HEAVY DUTY GAS CHAR BROILERS

# MODELS GHMCB34 & GHMCB51

FORMERLY MODELS M7806 & M7809

**MODEL GHMCB34 SHOWN**

VULCAN-HART COMPANY, P.O. BOX 696, LOUISVILLE, KY 40201- 0696, TEL. (502) 778-2791

**FORM 30851 (3-94) (Formerly 114586 & 114587)**

# IMPORTANT FOR YOUR SAFETY

**THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL GAS EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD START-UP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.**

**POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.**

## IMPORTANT

**IN THE EVENT A GAS ODOR IS DETECTED, SHUT DOWN UNITS AT MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.**

## FOR YOUR SAFETY

**DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.**

## WARNING

**IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION OR MODIFICATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.**

**IN THE EVENT OF A POWER FAILURE, DO NOT ATTEMPT TO OPERATE THIS DEVICE.**

# TABLE OF CONTENTS


GENERAL . . . . . 4

INSTALLATION . . . . . 4

- Unpacking . . . . . 4
- Location . . . . . 4
- Installation Codes and Standards . . . . . 5
- Leveling and Connecting Manifolds . . . . . 6
- Gas Connections . . . . . 7
- Testing the Gas Supply System . . . . . 8
- Flue Connections . . . . . 8

OPERATION . . . . . 9

- Controls . . . . . 9
- Lighting and Shutdown Instructions . . . . . 9
- Preheating . . . . . 10
- Grid Tops . . . . . 10
- Grease Collector Tray . . . . . 10
- Cleaning . . . . . 10

MAINTENANCE . . . . . 12

- Vent . . . . . 12
- Service and Parts Information . . . . . 12

# Installation, Operation and Care of MAGIC-FIN HEAVY DUTY GAS CHAR BROILERS MODELS GHMCB34 & GHMCB51

# KEEP THESE INSTRUCTIONS

# GENERAL

The manufacturer suggests that you thoroughly read this entire manual and carefully follow all of the instructions provided.

Your Vulcan Gas Char Broiler is produced with quality workmanship and material. Proper installation, usage and maintenance of your broiler will result in many years of satisfactory performance.

# INSTALLATION

### UNPACKING

This char broiler was inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the shipment. Immediately after unpacking, check for possible shipping damage. If the broiler is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

Remove all shipping wire, wood blocking, top grid grates, burner radiants, burners, manifold cover, grease collector tray and lower panel.

Before installing, verify that the type of gas supply (natural or propane) agrees with the specifications on the rating plate which is located on the lower front panel. If the supply and equipment requirements do not agree, do not proceed with the installation. Contact your dealer or Vulcan-Hart immediately.

### LOCATION

This char broiler is for use in non-combustible locations **ONLY**! The equipment must be kept clear of any combustible constructions or substances.

The installation location must allow adequate clearances for servicing and proper operation. A minimum front clearance of 36" is required.

The broiler must be installed so that the flow of combustion and ventilation air will not be obstructed. Adequate clearance for air openings into the combustion chamber must be provided. Make sure there is an adequate supply of air in the room suitable for the amount of combustion gas feeding the broiler burners.

## INSTALLATION CODES AND STANDARDS

Install this equipment in accordance with:

1. State and local codes, or in the absence of local codes, with:

2. National Fuel Gas Code, ANSI-Z223.1 (latest edition), available from the American Gas Association, Inc., 1515 Wilson Blvd., Arlington, VA 22209.

3. National Electrical Code ANSI/NFPA 70 (latest edition).

For broilers equipped with casters, the installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 (latest edition), and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 (latest edition). Provide a gas line strain relief to limit movement of the broiler without depending on the connector and any quick-disconnect device or its associated piping to limit the broiler movement. Attach the strain relief to the rear of the broiler (Fig. 1). Should it be necessary to disconnect the restraint, turn off the gas supply before disconnection. Reconnect the restraint before turning the gas supply on and returning the char broiler to its installation position.

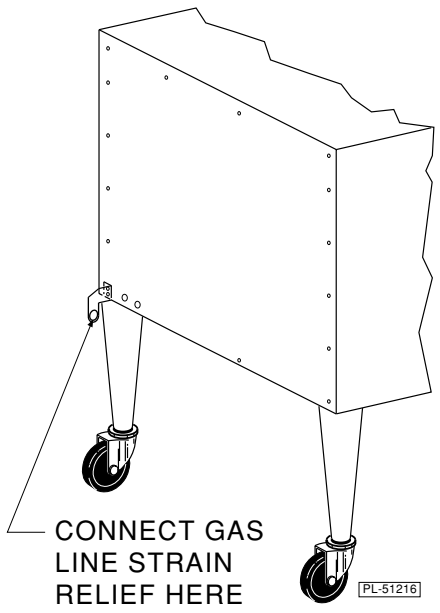


**Fig. 1**

## LEVELING AND CONNECTING MANIFOLDS

1. Place the broiler in the exact position it is to occupy. If the broiler is to be used in a battery, it is recommended that it be installed on either end of the battery due to the intense heat and the need for adequate ventilation. **The broiler may NOT be installed next to a deep fat fryer.**

2. Using a carpenter's level, level the broiler from front to rear and from side to side. Unless the broiler is level, it will be difficult to line up the manifold piping, and appliances will not butt tightly.

3. Effective January 4, 1994, Vulcan-Hart Company is in the process of changing gas pipe union vendors from Flagg to Stockham on all gas heavy duty appliances. During this changeover, there will be three possible conditions of installation. Please read the information below carefully to determine the correct installation procedure for your appliance.

   a. Broilers with square front tops are now shipped with Stockham gas manifold pipe unions. When battering a squared front top appliance with a heavy duty appliance built prior to January 4, 1994, remove the old style Flagg union fitting of the existing field appliance (Fig. 2) from the manifold pipe and replace it with a Stockham union (Fig. 3).

   b. Broilers with rounded front top using the Stockham fitting (Fig. 3) will also require the changeout described in Item (a). In this event, you will receive two unions. One union will be installed on the new appliance manifold pipe and one will be packaged unmounted in the oven, broiler or cabinet base compartments (depending on models). Remove the Flagg union (Fig. 2) from the existing field appliance and replace it with the prepackaged Stockham union (Fig. 3) before installing the new appliance.

   c. Broilers with rounded front tops shipped with one Flagg union (Fig. 2) will not require the above changeout.

   Questions or concerns regarding the above installation procedures may be addressed by calling the Vulcan-Hart Service Department (502) 778-2791.

**Fig. 2**

**Fig. 3**

4. Engage union nut on manifold pipe with male fitting on next appliance and draw union hand tight. Be sure broilers butt both front and rear.

5. If manifolds do not line up, units are not level.

6. If the broiler is installed on the end of the battery and the top of the front top does not line up with the adjacent unit, adjust front tops by means of bolts on the underside before replacing the manifold cover and installing the valve handles.

7. Continue to level up and connect manifold pipe until all appliances in the battery are connected. Then tighten manifold unions gas tight.

**GAS CONNECTIONS**

All gas supply connections and any pipe joint compound used must be resistant to the action of propane gases.

Connect gas supply to the broiler(s). Make sure the pipes are clean and free of obstructions, dirt, and piping compound.

Codes require that a gas shutoff valve be installed in the gas line ahead of the broiler.

Natural gas broilers and propane gas broilers are equipped with fixed orifices and no adjustment is necessary.

The gas manifold of this broiler, or battery of which it is a part, must be connected to a pressure regulator (not supplied) with a preset outlet pressure of 6" W.C. (Water Column) for natural gas or 10" W.C. for propane gas. The regulators must have:

- A.G.A. design certification.
- Enough regulation capacity for the total connected gas load.
- Pressure adjustment range to allow adjustment for the manifold pressure marked on the rating plate.

Unless the manifold pressure on all connected broilers is the same, a separate regulator must be supplied for each broiler having different manifold pressures.

Be sure all burner and pilot valves are in a closed position. Turn on gas supply and check for leaks.

**WARNING:** PRIOR TO LIGHTING, CHECK ALL JOINTS IN THE GAS SUPPLY LINE FOR LEAKS. USE SOAP AND WATER SOLUTION. DO NOT USE AN OPEN FLAME.

After piping has been checked for leaks, all piping receiving gas should be fully purged to remove air.

Ensure that burner heads are connected.

Adjust burners making sure they line up with burner nozzles and that all burner baffle plates are hanging in the proper position.

## TESTING THE GAS SUPPLY SYSTEM

When test pressures exceed 1/2 psig (3.45 kPa), the broiler and its individual shutoff valve must be disconnected from the gas supply piping system.

When test pressures are 1/2 psig (3.45 kPa) or less, the broiler must be isolated from the gas supply system by closing its individual manual shutoff valve.

## FLUE CONNECTIONS

DO NOT obstruct the flow of flue gases from the flue duct located on the rear of the broiler. It is recommended that the flue gases be ventilated to the outside of the building through a ventilation system installed by qualified personnel.

From the termination of the broiler flue vent to the filters of the hood venting system, an 18" minimum clearance must be maintained.

Information on the construction and installation of ventilating hoods may be obtained from the standard for "Vapor Removal from Cooking Equipment," NFPA No. 96 (latest edition), available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

# OPERATION

**WARNING:** THE BROILER AND ITS PARTS ARE HOT. USE CARE WHEN OPERATING, CLEANING OR SERVICING THE BROILER.

## CONTROLS (Fig. 4)

**Burner Valves** — regulate the gas flow to the broiler burners. Turn knob counterclockwise to increase flame and clockwise to decrease flame.

**Model GHMCB34 Shown**

**Fig. 4**

## LIGHTING AND SHUTDOWN INSTRUCTIONS

1. Turn main gas supply ON.

2. Turn burner valve ON and purge air from lines. Turn valve OFF and wait five minutes.

3. Using a taper, light the pilot. Turn burner valve ON.

4. If pilot fails to light, turn burner valve and main gas supply OFF, wait 5 minutes, and repeat Steps 1 through 3.

**Nightly Shutdown:** Turn burner valve OFF; the pilot will remain lit.

### Extended Shutdown

1. Turn burner valve OFF.
2. Extinguish pilot light.
3. Turn main gas supply OFF.

## PREHEATING

1. Turn burner valves to the HI position and allow 30-35 minutes for preheating. After this period of preheating time, grid temperatures should be in the ideal range for the most favorable cooking results (around 600°F).

2. Turn burner valve to the LO position (which is preset at the factory) to maintain grid temperatures between 575°F and 625°F, which will provide ideal cooking conditions and the optimum finished product.

DO NOT leave the burner valves set in the HI position, except for cleaning grid grates, for any extended period of time beyond the recommended preheating time; it will produce grid temperatures in excess of 1000°F. These temperatures will result in unfavorable cooking conditions, excessive carbonization of grease on the grid and a poor tasting product. Excessive temperatures will also lead to premature failure of the radiants and grid tops.

## GRID TOPS

The GHMCB34 and GHMCB51 are equipped with reversible grids (see Fig. 4). The grids may be placed on one side so that they are sloped and lifted away from the burner flame, or placed flat on the broiler so that they are close to the burner flame.

**WARNING:** GRID TOPS ARE HOT. USE CARE WHEN CHANGING GRID TOP POSITIONS.

## GREASE COLLECTOR TRAY

Periodically check and empty the grease collector tray (see Fig. 4) to avoid overflow of grease. To remove tray, pull grease tray handle straight out, empty and replace tray.

## CLEANING

### Burner Radiant

Clean the burner radiants daily with a good wire brush. The radiants may be cleaned in place over the burners, or they may be removed for a more thorough cleaning.

### Burner Performance

If after a period of satisfactory operation burner flame characteristics should change or length of flame should be reduced, either the mixer opening, the gas orifice or the burner ports have become restricted. Clean burners every 60 days or more often if required. To clean burners, boil in a strong solution of lye water for about 15 minutes. Ports can be opened by hand with a sharp pointed metal instrument or a proper sized drill bit.

### Enamel Finished Surface Parts

Clean using a cloth with detergent solution. Rinse thoroughly and wipe dry with a soft clean cloth.

**Stainless Steel**

When scraping off heavy deposits of grease or oil from stainless steel equipment, never use ordinary steel scrapers and knives. Particles of ordinary steel may become embedded in, or lodge on, the surface of the stainless steel. These will rust, causing unsightly stains. Where it is necessary to scrape, use stainless steel, wood, plastic or rubber tools.

Clean exterior finish of equipment with a mild soap solution or similar grease dissolving material. If this is done every day, before grease is burned on, time and work will be saved.

For routine cleaning of stainless steel, use ordinary soap or detergent and water. To prevent water spots and streaks, rinse equipment thoroughly with warm water and wipe dry with a soft clean cloth. Addition of a rinsing agent will also help prevent spotting.

Stubborn spots or stains that resist soap and water usually can be removed with a paste made of water and mild scouring powder. When applying these powders, be sure to rub in the direction of the polish lines on the steel to preserve the original finish.

Fingerprints are sometimes a problem on highly polished surfaces of stainless steel. They can be minimized by applying a cleaner that will leave a thin oily or waxy film. To use these cleaners, simply wipe on and remove excess with a soft dry cloth. After using, subsequent fingerprints will usually disappear when wiped lightly with a soft dry cloth or with a cloth containing a little of the cleaner. If the surface is especially dirty to start with, wash first with soap or detergent and water, rinse thoroughly and wipe dry with a soft clean cloth.

In and around broilers where temperatures reach 500°F or more, straw-colored or slightly darkened areas may appear on stainless steel. This "heat tint" is caused by a slight oxidation of the stainless steel and is not harmful. To control or minimize this condition, never use more heat than is absolutely necessary. Heat tint can be removed by scouring vigorously with stainless steel wool and a paste made of a scouring powder. Again, remember to rub in the direction of the polish lines. Some prefer special heat tint remover designed for use with stainless steel.

Soaking with hot soapy water will help greatly to remove burned-on foods and grease. Stubborn deposits can be removed with scouring powder mixed into a paste and applied with stainless steel wool or sponges. Remember to rub in the direction of the polish lines.

# MAINTENANCE

**WARNING:** THE BROILER AND ITS PARTS ARE HOT. USE CARE WHEN OPERATING, CLEANING OR SERVICING THE BROILER.

## VENT

Annually check the hood venting system and appliance flue to ensure they are free of obstructions. Be sure appliance is cool to the touch before making any hood or flue checks.

## SERVICE AND PARTS INFORMATION

To obtain service and parts information concerning the Model GHMCB34/ GHMCB51 Gas Char Broiler, contact the Vulcan-Hart Service Depot in your area (refer to the listing supplied with the broiler), or Vulcan-Hart Company Service Department at the address or phone number shown on the front cover of this manual.